

KEY et al
Appl. No. 10/528,387
September 24, 2008

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REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1-9 and 11-16 are in the case.

I. THE 35 U.S.C. §112, SECOND PARAGRAPH REJECTION

Claims stand rejected under 35 U.S.C. §112, as allegedly indefinite in view of the expression "a reactive derivative thereof". In response, and without conceding to this rejection, claim 1 has been amended to recite the reactive derivatives listed at page 4, lines 22 onwards in the specification. No new matter is entered. Withdrawal of this rejection is accordingly respectfully requested.

II. THE ANTICIPATION REJECTIONS

It is noted, with appreciation, that the anticipation rejections have been withdrawn.

III. THE OBVIOUSNESS REJECTION

Claims 1-9 and 11-16 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Baker et al. (EP 0749948). The Action asserts that:

"However, the claims are not directed to the improvement of preventing precipitation of an Ir/promoter system in which high concentrations of promoter are present during the claimed process; but, rather, they are simply directed to a process for the production of acetic acid by carbonylating methanol with carbon monoxide in the presence of an iridium carbonylation catalyst. Furthermore, with respect to the difference in the concentrations of promoter between the prior art and the claimed process, this is directly related to the optimization of the process in order to control the selectivity of the catalytic process by routine

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experimentation. Therefore, it would have been obvious to the skilled artisan in the art to be motivated to adjust the ratio of iridium, promoter and stabilizer in the prior art process so as to improve the rate for the carbonylation process."

The rejection is respectfully traversed.

The present invention relates to a process for the production of acetic acid by carbonylating methanol and/or a reactive derivative thereof selected from methyl acetate, dimethyl ether and methyl iodide, with CO. The carbonylation is carried out in the presence of an iridium catalyst, a ruthenium, osmium or rhenium promoter, and a catalyst stabiliser selected from indium, cadmium, mercury, gallium or zinc, wherein the iridium:promoter:stabiliser molar ratio is maintained in the range 1:(>2 to 15):(0.25 to 12).

Baker relates to improving the rate of carbonylation in an iridium-catalysed process for the carbonylation of an alkyl alcohol by the presence of a promoter selected from cadmium, mercury, zinc, gallium, indium and tungsten, optionally with a co-promoter selected from ruthenium, osmium and rhenium. However, a problem associated with the Baker approach is that at promoter:iridium ratios of greater than 2:1, precipitation of the catalyst system (i.e. iridium and promoter) occurs. This will be seen by comparison of Experiment E and Experiment F of Baker. In Experiment E, a ruthenium to iridium ratio of 2:1 is employed and no precipitate is formed whereas, in Experiment F, a high concentration of promoter to iridium is employed (i.e., promoter:iridium of 5:1) and a precipitate is formed (see Baker, Tables 1 and 2).

It is clear, therefore, based on Baker, that one of ordinary skill in this art would not have been motivated to increase the ratio of promoter: iridium to greater than 2:1 as

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presently claimed in view of the precipitation problem. The claimed range is therefore not simply "....directly related to the optimization of the process in order to control the selectivity of the catalytic process by routine experimentation" as asserted in the Action. The person of ordinary skill would clearly have been lead **away** from increasing the ratio of promoter: iridium to greater than 2:1 since Baker discloses that precipitation occurs at higher promoter: iridium ratios. Precipitation of the catalyst system is disadvantageous, not least because it results in the loss of expensive catalyst and promoter metals. Any "optimization" sought by the skilled person would not have involved utilization of a range that Baker discloses gives rise to increased precipitation. Even if the person of ordinary skill did decide to employ a higher ratio of promoter:iridium (it is believed that this would not have occurred to the skilled artisan based on Baker for the above-stated reasons), there is no disclosure or suggestion in Baker as to how to overcome the problem of precipitate formation.

In summary, Baker is not concerned with the problem of preventing catalyst precipitation and, furthermore, does not disclose or suggest a solution to such a problem. The person of ordinary skill, seeking to find a solution to the problem of preventing catalyst precipitation at high promoter concentrations would not therefore have been motivated to arrive at the subject matter of the claims of the present application based on Baker. Absent any such motivation, it is clear that Baker fails to give rise to a *prima facie* case of obviousness in this case. Withdrawal of the obviousness rejection is respectfully requested.

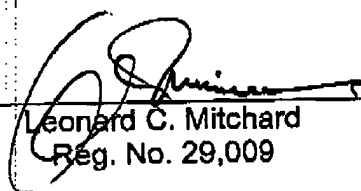
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Favorable action is awaited.

Respectfully submitted,

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